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Are Banks the Villains in World Steel Glut?

DECEMBER 5, 1986 VOL. 229, NO. 23

IRON AGE
METALS PRODUCER

Cover Photo: Courtesy of Weirton Steel Corp.

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The study was done on 1985 data by the American Iron and Steel Institute (AISI) with technical help from the U.S. Commerce Department and the Bethlehem Steel Corp. Its main finding: the "indirect steel trade" in 1985 resulted in imports of products containing 16.1 million net tons of steel, and exports of products with 8.7 million net tons. That comes to what AISI calls a "U.S. indirect steel trade deficit" of 7.4 million tons.

The study's other findings include:

—That those 7.4 million tons of steel—over and above the 22.3 million tons of direct finished steel mill product imports—were supplied by foreign steel mills for manufactured products sold in the U.S. in 1985. And, the two sources combined accounted for about 30 pct of all domestic steel demand last year.

—Motor vehicles and parts accounted for two-thirds of the net indirect steel deficit.

—In terms of country of origin, Japan was the largest supplier of steel-containing imports with 36 pct of the total. Canada and the European Economic Community were next in line with 24 and 23 pct, respectively. And, within the EEC, West Germany was the largest supplier of imports with 53 pct of its total.

In releasing the study, AISI contended in a statement, "The data confirm the growing problem of 'hollow corporations' operating in the U.S. As a result, neither the basic steel industry nor many of its major customers have been able to participate in the nation's economic recovery over the past four years."

The trade group also said the study "calls into question" the extent of the decline in domestic steel demand, adding, "The fact is, that if you add the 7.4 million tons of steel consumed directly in the U.S. in 1985 to the 'apparent supply' of steel mill products consumed in the U.S. last year—94.4 million tons—you find a total of about 102 million tons of steel (direct and indirect combined) moving into consuming channels."

It added, "That is about 20 million tons below the boom years of 1973-74, but is not far from the level achieved in 1981—the last good year the steel industry had."

AISI then claimed, "What these figures... substantiate, is that, while steel demand has been hurt by the substitution of competitive materials and the downsizing of automobiles, there has not been a drastic shift away from goods made of steel. Rather, it is soaring imports of steel—both direct and indirect—that primarily account for reduced steel demand from domestic mills."

Wheeling-Pittsburgh posts a $19 million profit in third quarter

For the third quarter of 1986, Wheeling-Pittsburgh Steel Corp. reported a net income of more than $19 million.

That came to 8.4 pct of sales, which was the best for any large steel company in the quarter. It was the best for any steel company in years.

Wheeling-Pittsburgh is bankrupt, of course, and that condition reduced interest expense by $12.4 million in the third quarter. The financial failure also relieved the company of some pension obligations and helped in reducing labor costs to $18 an hour.

More recently, LTV Corp. joined Wheeling-Pittsburgh in bankruptcy. LTV is seeking to renegotiate its labor contract with United Steelworkers of America. The company may have to turn over part of its pension burden to the government.

There have been steel bankruptcies in the past. McLouth Steel and Alan Wood are just two of the casualties. But the LTV and Wheeling-Pittsburgh failures are massive and affect the sheet grades that are the basis for tonnage production.

Other mills wonder about the multi-tier cost structure being created by the bankruptcies.

"Two of our major competitors have filed for chapter 11 bankruptcy protection," said Robert L. Loughhead, president of Weirton Steel Corp. "While operating under protection from creditors, they are achieving many cost eliminations or avoidances that are inherent, at least temporarily, in Chapter 11."

Weirton has been able to prosper in this environment. The company earned over $11 million in the third quarter. Mr. Loughhead noted that Weirton, itself, was a "reconstituted" steel company. In this case, the cost reduction was achieved by the willingness of employees to take a pay cut.

You have to wonder if the whole industry isn't heading toward some common denominator. With a significant portion of the industry bankrupt, it may be difficult for any large mill to stay solvent.

The work stoppage at steel plants of USX Corp. will probably postpone the industry's day of reckoning, but third quarter results suggested that a showdown would be coming. Losses were sustained by USX, Bethlehem, Armco, National and Inland in the quarter.

Steel's Third Quarter
(In Millions of Dollars)

	Earnings	Sales
USX	(163.00)	3,343.00
BETHLEHEM	(71.30)	1,032.90
INLAND	(4.65)	785.74
ARMCO	(59.00)	633.20
NATIONAL	(18.60)	531.30
CYCLOPS	1.80	344.21
WEIRTON	11.12	295.14
WHEEL-PGH.	19.17	228.75
NUCOR	13.91	195.74
CARPENTER	1.15	117.37
LUKENS	1.77	101.88
FLORIDA	5.78	87.07
COPPERWELD	(1.36)	79.93
QUANEX	(3.73)	75.60
LACLEDE	1.11	60.25
CF&I	(11.66)	42.06
EASTMET	(3.77)	19.85

() denotes a loss

ARE BANKS THE VILLAINS IN WORLD STEEL GLUT?

After providing the funds for a massive expansion in the late 1970s, steelmakers in the developing nations contend, the bankers then pulled the plug by jacking up interest rates.

BY GEORGE MCMANUS

For the world's steel producers, money is the root of many evils.

Overcapacity, unfair trade, and other evils can be traced in part to the monetary sequence that began in the 1970s with the explosion of oil prices. Gushing oil dollars flowed into banks and were recycled into developing countries.

"Mexico's foreign debt grew from $35 billion in 1978 to $88 billion in 1982," said Rafael R. Paez, chairman of Grupo Industrial Alfa, which owns Hylsa.

Mr. Paez took part in a financial discussion at the recent Rio de Janiro meeting of the International Iron and Steel Institute (IISI).

It was brought out at IISI that Mexico's borrowing binge was typical. Brazil's external debt rose to $100 billion. The whole developing world went into hock for $1,000 billion. A major portion of this – 60 pct for Mexico – was owed to commercial banks. Although the money was intended for long term projects, it was lent on a short term basis at floating interest rates.

Having provided the funds for a massive steel expansion, the bankers then pulled the plug by jacking up interest rates. The U.S. prime rate went over 20 pct in late 1980 and stayed high through most of the next two years.

One effect was to depress world markets. In 1982, steel shipments of U.S. producers fell to 62 million tons, the lowest level since 1958.

Also depressed were the economies of developing countries. With home demand lagging, steel producers in Brazil and elsewhere stepped up export efforts.

"For private enterprise, which must produce profits, there is no alternative but to export," said Jorge Gerdau Johannpeter, head of Brazil's Gerdau Group and also president of the country's Association of Private Steelmakers.

For both public and private companies, the pressure to export was compounded by the huge foreign debts. Brazil's interest payments rose to $10 billion a year or more than 3 pct of GNP. The debts created pressure and they also provided leverage for gaining access to foreign markets.

"It is important to stress to the countries whose debtors we are, that the possibility of our settling our external debt is being restricted by their imposing obstacles to their importation of our steel products," said Mr. Johannpeter.

Among those sympathetic to this view are the bankers. "All the big American banks except one have more credit in the developing countries than their assets," said Wolfran Engels, professor at Johann Wolfgang Goethe University.

The banks would all go broke if developing countries defaulted, said Dr. Engels. (The one exception would go down because it has lent money to the other banks, he said.)

One final bit of mischief was wrought by the banking community. By keeping U.S. interest rates high, the bankers drew funds into the country and strengthened the dollar. This made the U.S. a particularly inviting target for surplus steel.

As a result of all this, a large amount of steel was forced on a weak world market. Needless to say, the prime recipient was the U.S. Imports from developing countries to the U.S. rose from 3.2 million tons in 1980 to more than

'Even under peak demand conditions, a large part of capacity ... will remain idle in (1990).'

Lenhard J. Holschuh, secretary general of IISI.

The developing countries 'have become the dominant influence in the American steel market.'

David M. Roderick, chairman of USX Corp.

6.3 million tons in 1983.

The developing countries "have become the dominant influence in the American steel market," said David M. Roderick, chairman of USX Corp. and head of AISI at that time.

In 1984, there was a further increase to 10 million tons of U.S. imports from developing nations. This lifted total imports to more than 26 million tons. Another 24 million tons arrived in 1985. The two-year intake of 50 million tons had a devastating effect on the American steel industry.

Steel imports are now receding a little. Brazil, Korea, and other developing countries have been brought into the U.S. voluntary restraint program for steel. In addition, there have been economic revivals in Brazil, Venezuela, and Argentina. The Brazilians are, in fact, having second thoughts about the export of semifinished steel to the U.S.

The export surge is easing, but the developing countries are moving ahead with fresh expansion programs. Steel capacity of the developing world is expected to increase from 86 million tons in 1985 to 110 million tons in 1990.

The added capacity should be needed to meet home needs. Brazil's steel usage of 93 kg per capita is well below the average of advanced nations. With general industrial growth, steel consumption in developing countries is scheduled to rise from 101 million tons in 1985 to 119 million tons in 1990. The developing bloc will still be a net importer of steel by the end of the decade.

The developing countries continue to rely on external financing for industrialization. In fiscal 1986, the World Bank lent $1.2 billion to Brazil and $1.7 billion to India. There is a major precedent for these transaction.

"In the 18th and 19th centuries," said Dr. Engels, "the U.S. was a developing country with a supposedly high current account deficit for more than 100 years."

That may be true, but with the mobility of both capital and technology today, instant industrialization can cause excesses. In planning their expansions, the developing nations must keep in mind that the world steel market can't absorb large surpluses.

According to IISI, the industrial nations now have about 450 million tons of steel capacity and only

LATIN AMERICAN STEEL PROFILES

The Latin American steel industries were spotlighted by October meetings of the International Iron & Steel Institute (IISI) in Brazil and of the Latin American Iron and Steel Institute (ILAFA) in Mexico.

The status of steel in the various countries was covered in presentations at IISI and in the ILAFA publication, Siderurgica Latino.

About 37 million tons of raw steel will be produced by Latin American countries in 1986. This tonnage, which will be double the output of 10 years ago, comes from 30 fully integrated mills and 67 semi-integrated plants.

In 1985, oxygen furnaces accounted for 56 pct of Latin America's steel and electric furnaces 37 pct. More than 18 pct of the iron production was by direct reduction and 6.6 million tons of iron came from charcoal blast furnaces.

Brazil

About 68 pct of Brazil's steel comes from nine integrated mills controlled by SIDERBRAS, the state holding company.

Amaro Lanari, president and chairman, SIDERBRAS: "From a modest 19th place in 1970, we jumped last year, with a record 20.5 million tons, to 7th place among the major steel producing countries in the Western World.

"However, if we consider per capita steel consumption, in 1985 our index was 93 kg per capita, lower than that of countries with the same degree of development... the country must increase its steel production.

"Thus we dare to state that up to the end of the next decade, we must double our production to reach a figure of around 40 million tons per year.

"We do not believe in the immediate need to install large sized works starting from zero (greenfield).... Thus our new investments will be in accordance with our capital and indebtedness capacity...." Source: ILAFA

Private Sector

Of the 20.5 million tons produced by Brazil in 1985, 6.4 million tons came from the private sector.

Jorge Gerdau Johannpeter, president of the Association of Private Steelmakers and also head of the Gerdau Group: "The private sector, responsible for more than 83 pct of non-flat steel pro-

'For the steel industry, this overall state of the economy means that severe difficulties lie ahead.'

Yashuhiro Yagi, president of Kawasaki Steel Corp.

'The fact that large subsidies are still being paid out in most EEC countries remains unsatisfactory.'

Wilhelm Scheider, chairman of Fried Krupp GmBH

321 million tons of steel consumption. The big nations have been working to reduce the surplus. Since the start of 1977, raw steel capacity has been reduced by 33 million tons in the U.S., 35 million tons in Europe, and 13 million tons in Japan.

There will be more cutbacks, but with consumption declining in the industrial nations, the world will continue to have a lot more steel than it needs.

"We expect a Western World crude steelmaking capacity of about 550 million tons for 1990," said Lenhard J. Holschuh, secretary general of IISI. "It is evident that even under peak demand conditions, a large part of capacity, which can be estimated at 70 million tons, will still remain idle in that year."

Overcapacity has been producing price cutting and profitless operation. Steel prices fell 9 or 10 pct in the U.S. last year. There was a similar problem in Europe.

"The price situation in the German steel industry remains unsatisfactory owing to stiff international competition," said Wilhelm Scheider, chairman of Fried Krupp GmBH.

Yen vs. Dollar

For Japan's steel producers, depressed world prices were especially painful because the yen has appreciated more than 50 pct against the dollar. In the first eight months of 1986, the 66 million tons of raw steel produced in Japan was down 7 pct from 1985.

"The outlook for the new fiscal year is grim enough," said Yashuhiro Yagi, president of Kawasaki Steel Corp. Both export and domestic activity will lag while the yen remains strong, said Mr. Yagi.

"For the steel industry," he said, "this overall state of the economy means that severe difficulties lie ahead. Decline in domestic sales would be inevitable because a portion of these sales translates into exports of steel in processed form, such as autos, machine tools and home appliances."

In this economic climate, many of the industrial nations are moving to restrict steel imports. The European Common Market has long regulated external steel trade through bilateral agreements.

American producers charged that the European restraints di-

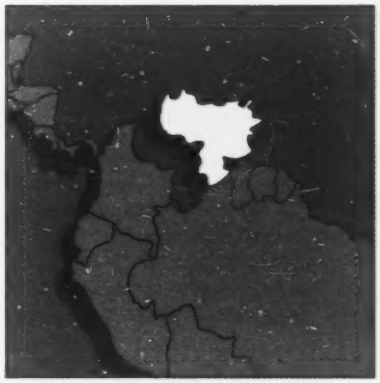
duction, is at present composed of 27 companies of which seven are integrated mills and 20 semi-integrated. (Products include) reinforcing bars, profiles, merchant bars, seamless pipes, wire rods, and wires.

"From only 2.4 million tons in 1971, production reached 6.5 million tons in 1985. In that year, private mills exported 1.9 million tons, representing about 30 pct of total steel production.

"Up to the end of the 1970s, exports represented an insignificant percentage of the sector's sales. From 1981, however, the non-flat steel sector, as also the whole steel sector, began to undergo problems in consequence of the country's slower pace of industrial activity.

"The economic crisis... left only two options: To operate the steel mills at a high rate of idle capacity and increasing losses; or to attempt to export the excess not absorbed by the domestic market.... For private enterprise..., which must produce profits, there is no alternative but to export.

"It is important to stress to the countries whose debtors we are and who often impose on us protectionist and discriminatory measures, that the possibility of our settling our external debt is being restricted by their imposing obstacles to their importation of our steel products." Source: IISI



Venezuela

Venezuela produced 3 million tons of steel in 1985, exporting 1.5 million tons of this total.

The biggest producer is the state-owned SIDOR, which makes extensive use of direct reduction.

Cesar A. Mendoza, president of SIDOR and also chairman of ILAFA: "For 1986, the company will be able to show a positive balance sheet for the first time in many years. The new situation makes it possible for the company to reach financial autonomy and put into effect the necessary investment programs for process improvements, cost reduction, product improvement and new product development.

"SIDOR will reach 3 million tons of crude steel in 1986, production volume to be increased to 4 million tons by 1990. We expect to enlarge our share on international markets to one and a half million tons of steel products.

"Apart from SIDOR's operational investments, FERROMINERE is planning a new pelletizing plant and new facilities for sponge iron to cover the requirements of our own steel industry and also for export. The private sector also has plans for modernizing and capacity expansion." Source: ILAFA

(Midrex Corp. has contracted with MINORCA to supply technology for the reactivation of a 720,000-ton reduction plant.) (Cont. on p. 34.)

(Mill)

	Metric tons, millions		Pct. change
	1985	1986*	1986 vs. 1985
	433	425	-1.8
	211	215	+1.9
	79	81	+2.5
	723	721	-0.3

*Estimated

verted steel to the U.S. Now, the U.S. has its own import quotas, and Canadians say these are diverting steel to Canada.

Imports accounted for 19 pct of Canada's steel supply in 1985. The Canadians say more than half the foreign tonnage was dumped or subsidized. In dealing with the problem, Canada is in the difficult position of resisting quotas on its shipments to the U.S. while moving toward controls for its own imports. (The big Canadian steel companies are informally restricting exports to the U.S.)

"All we've asked for is a monitoring process," insisted Don Belch, senior trade relations manager for Stelco Inc. "Import permits will be freely issued to anyone who asks for them."

The fact is that trade restraints by one country tend to force restraints by others. It's worth noting that while Brazil was complaining about U.S. steel quotas, the U.S. was complaining about Brazilian restrictions on computer imports.

Protectionism

There is a world trend toward protectionism, and there is extra bias against steel surpluses based on government subsidy. Much of the developing world's steel is government owned.

Free trade should be encouraged, said Jan D. Hooglandt, chairman of Hoogovens and retiring IISI chairman. But, he added, "the situation is different, of course, if we have to deal with centrally planned economies where cost has ceased to be a meaningful factor. In such cases, retaliatory measures – preferably of a temporary nature – by other countries may be justified."

Government support wasn't confined to developing countries

Argentina

Carlos A. Magliano, president and chairman, SOMISA: "SOMISA's policy aims at maximum use of its capacity in order to reduce costs, contribute to the health of the economy's external sector and maintain the level of employment.

"Steel consumption in Argentina dropped to its lowest level in years in 1985, but SOMISA increased raw steel production, lit its blast furnace No. 2, and practically kept back the import of semifinished products.

"The production not sold domestically was exported.... For example, total exports of the first five months of 1986 reached 350,000 tons (Out of 720,000 tons shipped over all.)

The domestic economy has recovered, "but in spite of the growing domestic demand, it is SOMISA's purpose to stay in the export market.

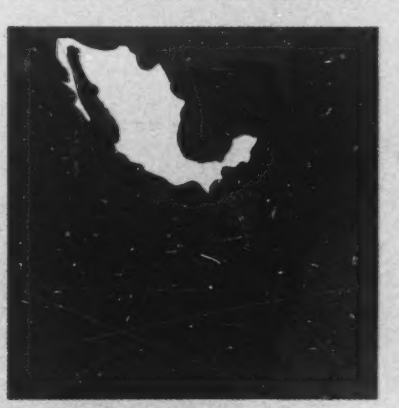
"Plans have been approved to surpass the 2 million ton level of raw steel production during the next months." Source: ILAFA

Private Sector

Alsides Lopes Aufrank, president and chairman, ACINDAR: "As Argentina's largest private steel enterprise, ACINDAR ranks also among the major steel companies in Latin America with manufacturing facilities that have potential production capacity of over 1.5 million tons of raw steel a year."

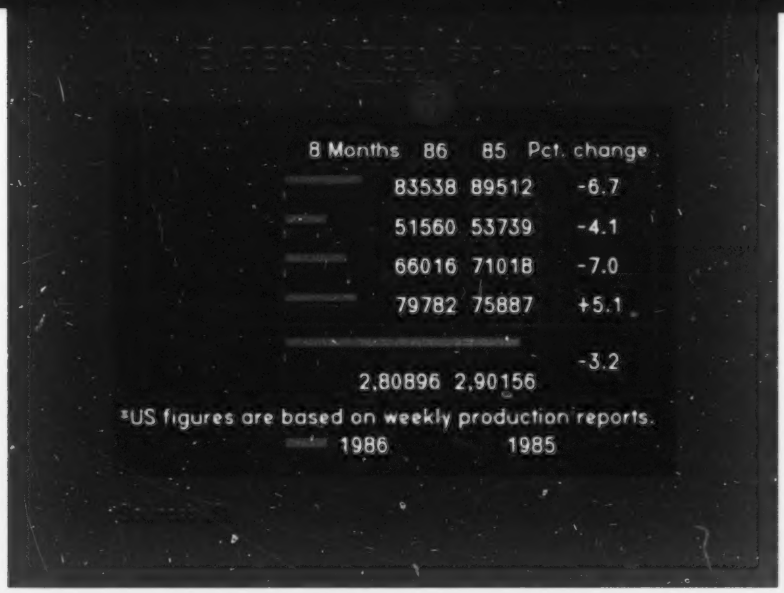
ACINDAR exported more than 370,000 tons in 1985, but is unhappy about protective measures.

"The United States, the nations that form the European Economic Community and even Canada have been blocking the access to a large number of Argentinian products.... The EEC applies protectionist criteria the same as the U.S. through the arbitrary or subjective setting of trigger prices. And Canada promoted in 1985 anti-dumping actions against Argentinian exports of barbed wire and seamless tubes." Source: ILAFA



Mexico

With raw steel output of 7.2 million tons in 1985, Mexico was the second largest producer in Latin America. Grupa In-



in 1985. "For the German steel industry, the fact that large subsidies were still being paid out in most EEC countries remained unsatisfactory," said Mr. Scheider of Krupp. However, government involvement is extensive in the developing world.

In Brazil, a loss of $200 million a month is being recorded by SIDERBRAS, the state holding company which controls 68 pct of the country's steel. The company will need a direct government subsidy of $700 million to get through the year. Nevertheless, Brazil is planning to expand steel capacity from 20 million tons now to 40 million tons by the year 2000.

In Australia, BHP is spending heavily on steel. "This investment, which will continue at more than $1 million a day, will total $1.4 billion for the duration of the Steel Plan," said David Rice, chief executive of BHP Steel International Group.

BHP doesn't rely on the Australian government for capital; the steel group earned $254 million last year; but BHP did receive a government 'bounty' of $11 million.

In Korea, the new Kwangyang Works is being brought on stream by the state-owned Pohang Iron & Steel Co. In Taiwan, the government-owned China Steel Corp. is in the middle of a $1.4-billion expansion.

A 3 million-ton greenfield plant is reportedly planned for Ningbo in mainland China. Great Britain and China have signed letters of intent for the project, which will cost $4 billion and be based on foreign financing.

It can possibly be argued that international credit is more likely to produce unbalanced growth than government involvement. Prior to the 1960s, do-it-yourself policies enabled Brazil to grow without the need to earn foreign credits.

"Real GNP expanded at average annual rates of 5.6 pct between 1926 and 1964, with industrial output growing 7.8 pct a year," said Mario Henrique Simonsen, former minister of planning for Brazil. "Industrial expansion was then mostly financed by domestic savings, reinvested profits, agricultural profits, and taxes."

To the extent that domestic savings are based on domestic wages, this kind of expansion tends to balance production with domestic buying power. "Real exports and imports virtually stagnated," said Mr. Simonsen of the Brazilian experience.

After 1964, Brazil turned away from self sufficiency, increasing its trade and its capital intake. There was rapid growth until the oil shock of 1974 left the country with a $4.7 billion trade deficit. Since 1975, Brazil has increased its exports 59 pct, reduced imports 48 pct and generated a trade surplus. □

dustrial Alfa, S.A. is a private company which operates steel plants (HYLSA) and supplies direct reduction technology (HyL).

Rafael R. Paez, chief executive officer, Grupo Industrial Alfa, S. A.: "Mexico's foreign debt grew from $34 billion dollars in 1978 to $88 billion in 1982. There was a significant increase in the proportion of commercial bank funds—around 20 pct of total financing in the 1960s to almost 60 pct in 1981. A large portion of this financing was contracted at floating interest rates. And it consisted mainly of short term credit."

External financing produced annual growth of 8.5 pct from 1978 through 1981. "However, this explosive growth turned out to be ephemeral. An adverse international environment, as evidenced by high interest rates and declining oil prices, coupled with negative domestic conditions, virtually paralyzed the economy since 1982.

"Given this environment, Mexico's challenge is to refocus its industrial development toward the export market to generate the foreign currency needed to service its enormous foreign debt.

"The problem that arises here is that quotas are imposed by country and not just to those companies getting subsidies.

"(Saddled with big debts) the profitability of the steel industry has been additionally affected by the government's restrictive policy on price controls. Last year Mexico's inflation rate was 64 pct whereas the authorized steel price increase was only 37 pct....

"Our domestic prices are 15 to 30 pct lower than the corresponding domestic prices in those countries (U.S. and Japan). Dumping prices have provided an erroneous reference point to our government in determining appropriate price increases."

Mexico's problems are particularly disheartening because the country seemed on its way to becoming a major steel power. In the early 1980s, plans called for increasing steel capacity from 8 million tons at that time to 29 million tons by 1990. The country was unique among the developing nations in that it was creating and exporting new steel technology. The HyL direct reduction process has been widely used throughout the world as well as in Mexico.

Source: IISI

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NEW USES FOR INDUCTION

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NEWSWATCH

Simmons, chairman of Allegheny Ludlum Steel Corp. "Foreign governments continue to subsidize their specialty steel producers. Foreign capacity to produce specialty steel, which has resulted in a worldwide glut, has increased rather than decreased in the last three and a half years."

In the first 10 months of 1986, imports of stainless and tool steels totaled more than 216,000 tons or 19.3 pct of the market. Imports of tool steel totaled more than 40 pct of the market.

The petition for extension of the 1983 restraints has been filed by the industry and United Steelworkers of America under Section 203 of the Trade Act. The parties asked that the measures be extended until 1990.

For the past 10 years or more, the specialty steel producers have been involved almost constantly in agitation for some form of trade restraint. Mr. Simmons expressed hope that a permanent solution to the trade problem might be forthcoming. "We've never been more optimistic that effective trade legislation would occur," he said.

Indirect steel trade continues to rise, AISI says

The "indirect" steel trade deficit grew nearly 50 pct from 1984 to 1985, according to the American Iron and Steel Institute (AISI).

The indirect steel trade deficit is a new method of figuring steel trade. It is calculated by determining the steel content of imported products, then subtracting the steel content of the same type of product exported by the U.S.

Using figures from the U.S. Departments of Labor and the Bureau of Census, and with technical asssistance from Bethlehem Steel Corp., AISI said this "indirect" trade grew from about 5.0 million tons in 1984 to 7.4 million tons the next year.

Results of an 1985 study in this area had been reported by AISI in October. However, the trade association said, the newly-developed figures for 1984 show what happened in 1985 was "part of a trend by foreign countries to increase the value of their shipments of manufactured goods to the U.S., while limiting such imports from the U.S."

Indirect Steel Trade*

In Millions of Net Tons

	Imports	Exports	Net
Auto	6.8	2.9	-3.9
Machinery	4.2	4.1	-0.1
Other	2.8	1.8	-1.0
Total	13.8	8.8	-5.0

* 1984 Source: AISI

And, AISI claimed, estimates by the International Iron and Steel Institute for earlier years indicate that as recently as 1980, U.S. indirect steel trade was roughly in balance.

These figures indicate, AISI said, "The growth in indirect steel imports, combined with direct steel mill product imports, shows exactly how much the United States steel market has really been taken over by imports. When these two amounts are added together, it becomes clear that rising imports of steel-containing products more than offset the small decrease in direct steel mill product imports from 1984 to 1985."

In its latest study of this indirect trade, for 1984, AISI reported that estimated imports were 13.8 million tons, while exports were 8.8 million tons (see table).

National brings ladle station onstream at Granite City

"Ladle metallurgy permits refinements of the chemical composition of the steel just before it is cast," said Masaharu Ito, vice president of technology, National Steel Corp.

"With these last minute refinements, we can assure our customers not only the exact chemical composition they need but exceptionally clean steel too with sulfur content as low as is possible anywhere in the world today," said Mr. Ito.

These comments came as National Steel dedicated a new ladle metallurgy facility at the company's Granite City Division near St. Louis.

Costing $16 million, the ladle facility employs the technology of Nippon Kokan, which has a 50 pct interest in National. Equipment was supplied by Davy McKee, which is licensed to supply Nippon Kokan and Daido Steel ladle technology in the U. S.

In the operating sequence at Granite City, 237-ton ladles are carried by rail car from the basic oxygen shop to the entrance of the ladle station. The ladle is lifted by crane to a position inside the station and then capped.

Argon is injected through a lance. The argon stirring promotes thermal and chemical uniformity as well as the removal of impurities. This technique is expected to boost the recovery of silicon, manganese and other alloys from the old average of 75 pct to as high as 95 pct.

Alloy additions are made by means of a computer controlled weighing system, which injects additives via a chute.

The system gives extremely low sulfur levels—as low as 0.002 pct. Reducing conditions make it possible to remove oxygen and sulfur.

"This low sulfur steel is especially important to automotive, canmaking and pipe and tube customers who subject steel to severe drawing and forming stresses in the manufacturing process," said Mr. Ito.

The ladle treatment facility serves a slab caster and is equipped for the buffering function considered important for smooth operation. Arc reheating in the ladle makes it possible to maintain or increase temperature

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MARCH 1987

Upgrading Hot Mills to Upgrade Quality

Gordon E. Forward, President, Chaparral Steel:

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Pre-Lubrication of Sheet

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DEFENSE ORDERS START TO SPUTTER

Orders going to capital goods producers were down in December, due mainly to a decline of $5.9 billion in defense orders. That slump brought down the total for capital spending to $34.5 billion from $38.7 billion in November.

Orders for nondefense capital goods rose to $30.1 billion in December from $28.4 billion the previous month.

New orders for primary metals increased $1.2 billion, or 12.6 pct, to $10.6 billion, following three months of declines. In the same period, orders for fabricated metal products went up slightly to $14.4 billion from $14.3 billion.

Transportation equipment orders showed a slight decline in December, down $100 million—or 0.2 pct—to $30.2 billion. And electrical machinery increased $1.7 billion, or 10.3 pct, to $18.5 billion, following declines in October and November.

During December, non-electrical machinery declined $1.4 billion, a drop of 8.5 pct. That followed a 11.3 pct increase in November.

Overall, new orders for all manufactured goods in December increased $2.5 billion, or 1.2 pct, to $201.9 billion, following a 3.6 pct increase in November. At the same time, new orders for durable goods went up 0.9 pct, or $1 billion, to $109.8 billion. However, virtually all unfilled orders were held by durable goods makers. In December, the durable goods orders backlog was $354 billion, while inventories for those manufacturers were down $1.7 billion to $183.8 billion.

For all of 1986, the department reported, new orders in all categories totaled $2.4 trillion, unchanged from 1985. Shipments for 1986 were $2.2 trillion, up 0.3 pct from 1985.

Billions of Dollars, Seasonally adjusted Monthly Totals unless otherwise noted Source: U.S. Dept of Commerce		Latest Month or Qtr.	Previous Month or Qtr.	Same Period Year Ago
CAPITAL EXPENDITURES (Annual Rates)				
U.S. Industry, Total	1st Q*	$386.8	$394.4	$377.9
Manufacturing, Total	1st Q*	141.2	154.2	144.0
Manufacturing, Durable Goods	1st Q*	67.9	74.2	68.0
Mining Industry	1st Q*	10.4	10.6	13.0
KEY INDICATORS, Durable Goods Manufacturing				
New Orders	Dec.	109.8	108.8	111.3
Shipments	Dec.	111.6	106.7	109.2
Inventories	Dec.	183.8	185.5	189.2
Unfilled Orders	Dec.	354.0	355.8	353.0
NEW ORDERS, METALWORKING				
Capital Goods Producers, Nondefense Industries	Dec.	30.1	28.4	30.6
Capital Goods Producers Defense Industries	Dec.	4.5	10.3	7.2
Primary Metals, Total	Dec.	10.6	9.4	10.1
Steel (SIC 331)	Dec.	4.4	3.7	4.1
Iron & Steel Castings (SIC 332)	Dec.	1.2	1.0	1.1
Nonferrous Metals	Dec.	5.0	4.7	4.9
Nonelectrical Mach.-Equip. Industries, Total	Dec.	15.5	16.9	16.2
Engines & Turbines	Dec.	0.7	1.2	1.7
Farm Mach.& Equipment (Shipments)	Dec.	0.7	0.7	0.8
Construction, Mining & Mat. Hdlg. Equip	Dec.	2.6	2.7	2.9
General Industrial Machinery	Dec.	1.2	1.5	1.3
Metalworking Machinery	Dec.	0.7	0.9	0.6
Machine Tools, Total ($Mill.)**	Dec.	136.1	132.6	175.0
Machine Tools, Metalcutting**	Dec.	86.8	83.9	116.6
Machine Tools, Metalforming**	Dec.	49.3	48.7	58.4
Electrical Mach. & Equip. Industries, Total	Dec.	18.5	16.7	16.3
Elec. Transmission & Ind. Equip.	Dec.	2.1	2.0	2.0
Household Appliances	Dec.	1.5	1.6	1.5
Communication Equipment	Dec.	6.0	5.5	5.2
Transportation Equipment, Total	Dec.	30.2	30.2	31.0
Motor Vehicles & Parts (Shipments)	Dec.	20.6	17.2	17.4
Aircraft, Missiles & Parts	Dec.	8.6	12.5	13.0
Shipbuilding & Military Tanks	Dec.	0.3	-0.3	0.3
Fabricated Metal Products, Total	Dec.	14.5	14.3	14.1
Instruments, Total	Dec.	4.6	4.6	5.0

*Est. – Commerce Dept. **Source: NMTBA

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E-LUBRICATED SHEET:

ILL OTHERS FOLLOW GM's LEAD?

STRIP PRODUCERS FIGHT CROWDING OUT

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What Steel Management Is Doing to Gain Market Share.

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STRIP STEELMAKERS ARE BEATING BACK THE CHALLENGES

In response to all the pressures, strip steel producers are moving to improve their capabilities and redefine their territories.

In a planned economy, there probably wouldn't be a cold rolled strip industry.

The planners would probably conclude that all cold rolling should be done on the high speed sheet mills of integrated producers. These are more efficient than the smaller facilities of strip companies.

There would be some logic in the planners' conclusion, but it would be wrong. The workings of the free U.S. market have shown there is a useful role for small, highly specialized producers of cold rolled strip.

The niche of the strip industry is fluid and currently under siege, but the industry is moving vigorously to beat back challenges.

The staying power of strip companies is vividly illustrated by a visit to Cold Metal Products Co., Inc., in Youngstown, Ohio. Producing low carbon, high carbon, and some stainless strip, Cold Metal operates profitably on sales of $70-85 million a year.

Next door to Cold Metal is the largely abandoned Campbell Works of what was once Youngstown Sheet & Tube Co. The blackened shell of this dead integrated plant stretches for miles and contrasts sharply with the very live operation of Cold Metal.

The strip industry has its own casualties, but it has been able to keep its products and to some extent, its fortunes, separate from the integrated industry.

"A true strip product is tailormade to the customer's requirements," said James R. Harpster, president of Cold Metal Products and president of the Association of Cold Rolled Strip Steel Producers.

"A sheet product is made one way," said Mr. Harpster. "If the customer can tailor his products to use it, he should because it's less expensive."

The tailoring of strip can involve a number of operations. "We buy hot-rolled and cold-rolled, anneal it and slit it," said Thomas C. Elliott, president of Elliott Brothers Steel Co., New Castle, Pa.

"In the case of high-carbon, we multiple anneal it," he said. "We provide different edges—a slit edge, a rolled-round edge."

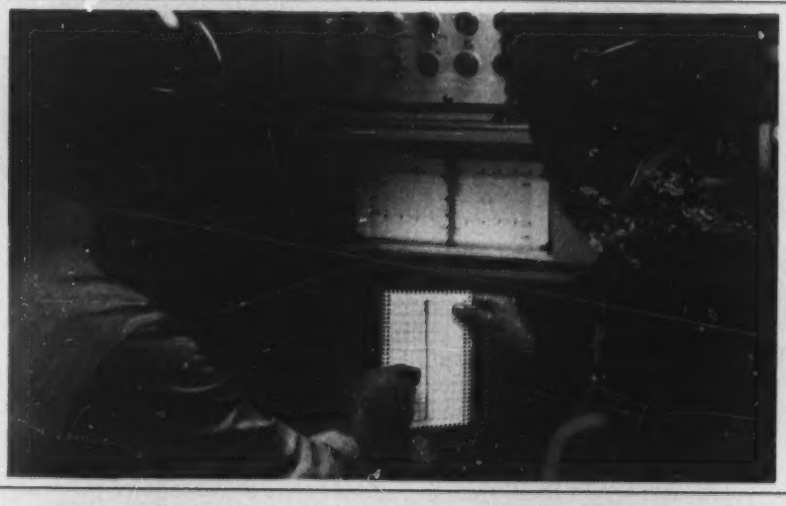
In the domestic industry, the maximum width for strip is 24 in. True strip is rolled in narrow widths and it is given a thorough cold reduction—40 to 90 pct.

"A strip product has much closer gage tolerances than sheet coil," explained Gordon A. Wilbur, vice president of operations for Cold Metal Products.

Steel passes through a slitting line at the Youngstown, Ohio, plant of Cold Metal Products Co., Inc., and is cut to the narrow width of strip.

High carbon steel is very important in the strip picture. "We roll low carbon, but about 75 to 80 pct of it is high carbon—the heat treatable grades, 1095, 1075, 1050," said Mr. Elliott.

Distinct from this kind of strip is material rolled by the integrated mills as wide sheet and then slit to narrow widths. Also differ-



Precision tolerances are a hallmark of the strip industry. A system at Cold Metal Products provides control as close as ±1 pct.

Cold Rolled Carbon Strip Steel

Thousands of Tons

Year	Domestic Shipments*	Imports**	% Import Share
1970	910.8	NA	–
1971	880.2	NA	–
1972	942.5	NA	–
1973	1164.9	56.4	4.6
1974	1206.5	44.3	3.5
1975	671.0	26.2	3.8
1976	841.4	42.5	4.8
1977	869.0	41.5	4.6
1978	923.4	49.3	5.1
1979	890.1	49.6	5.3
1980	665.6	47.0	6.6
1981	794.5	50.8	6.0
1982	548.3	49.2	8.2
1983	670.4	66.1	9.0
1984	714.7	145.3	16.9
1985	607.6	215.5	26.3
1986	677.0	125.0	15.6

*Source: American Iron & Steel Institute **Source: U.S. Department of Commerce
1986 Figures based on 11 months actual and December estimates.

ent is the slit sheet that is given a light, gage correction pass by a service center or processor.

The distinctions are reflected in a price for true high carbon strip about 25 pct higher than split sheet given one pass.

The price differential provides an incentive to foreign producers to shift tonnage into the strip area. Voluntary restraint agreements do cover strip, and the official statistics showed an import drop from 216,000 tons in 1985 to 125,000 tons in 1986.

However, the government classes everything over 12 in. wide as sheet, and there is no breakdown on the basis of quality. "A great deal of the product that comes in really is what we call a spilt sheet," said Mr. Harpster. "The big drop was in split sheet. Canada, of course, is not covered by the VRA, and the Canadian imports went wild in 1986."

Some of the material arrives in circuitous manner. "It comes from Canada and it doesn't come from Stelco or Dofasco," said Mr. Elliott. "It comes from secondary processors. It may go through a couple of people in Canada and then it's shelled into here.

Also increasing, he indicated, is material that moves through domestic processors. "In the strip business," he said, "you used to know who you were up against. But now, it's every guy with a slitter in New York or Chicago or Detroit. They pick up steel and gage correct it."

Facilitating this activity has been the movement of foreign suppliers into higher value products. "High carbon sheet sells for 8¢ to 10¢ a lb higher than low carbon sheet," said Mr. Harpster.

"The Japanese would bring in 1050 sheet 24 to 30 in. wide and it would come in under the sheet statistics," he said. "They would sell it to service centers below the domestic 1050, and then the service centers would split it into strip." Starting in January, the government began classifying sheet by carbon content.

Steel Quality

A final consideration of the strip companies is the quality of steel from integrated producers. In this regard, the strip industry has something of a split personality.

"We're concerned with the quality of domestic raw material," said Richmond Glover, president of Wallace Barnes Steel in Bristol, Conn. The raw material is hot rolled sheet, and strip people would like the integrated mill to do a better job on shape and profile off the hot mills.

On the other hand, the improved quality of cold rolled sheet from the integrated mills tends to blur product distinctions. "The sheet tolerance is roughly ±10 pct," said Gordon Wilbur of Cold Metal Products. "The standard strip tolerance is ±5 pct.

"When the domestic or foreign cold rolled sheet mills use half standard, they're in the ±5 pct range," he explained. "So they're getting right on the edge of the old strip mill capabilities."

In response to all the pressures, strip producers are moving to improve their capabilities and redefine their territories. A study now being conducted for the strip association by the Illinois Institute of Technology Research aims at determining how much better current capabilities are. It's expected that new, tighter strip standards will be established when all the information has been collected.

Individual mills have already set up their own tolerances. "We have a new CMP standard tolerance, which is approximately half of what the old tolerance was," said Mr. Harpster of Cold Metal Products (CMP). "And then we've got what we call the CMP precision tolerances, which are sort of half again as tight."

The precision tolerances, which carry price extras, are as close as ±1 pct. "So we're talking almost one-tenth the standard sheet tol-

erance," said Mr. Harpster.

To achieve this kind of uniformity, Cold Metal Products has installed a hydraulic control system employing the thickness sensor of Vollmer America, Inc.

"The heart of this system is the gap sensor," said Mr. Wilbur. "This is a mechanical sensor. It goes right in the roll gap and gives accurate results."

Cold Metal Products has equipped cold mills in both Youngstown and Indianapolis with the new control. The mills employ the Steckel principle, which was developed at Cold Metal. It minimizes the damage from a break in the strip. The company has three continuous annealing lines and batch annealing.

The Vollmer system is being used as part of the extensive modernization program at Rome Strip Steel Co. in Rome, N.Y.

"We have the newest tandem mill in the country," said A.B. Hinman, president of Rome Strip.

Much of the strip rolling in the U.S. is done on reversing mills, but Rome has a three-stand continuous mill. As Mr. Hinman noted, this was the last tandem mill built in the U.S. by anyone, including the integrated producers.

Rome Strip has achieved a major first in the U.S. "We've got a new six-high mill," said Mr. Hinman. This is a Sendzimir version of the six-high. A third mill is being converted to the Sendzimir Z-high design.

The quality gains from new equipment have enabled Rome Strip to maintain a good workload despite the inroads of split sheet in the market.

"We're sitting here kind of smug," said Mr. Hinman.

Others are moving to strengthen their positions. "We've been updating our equipment because everyone's more and more particular," said Mr. Elliott. "We put in a new slitter last year. We updated our four-high mill with new Weston X-Ray gages." He notes that his company's small size permits fast reactions and the ability to handle limited quantities.

The Connecticut location of Wallace Barnes makes the company particularly sensitive to world pressures. "Because of the foreign competition, we are looking at both quality and productivity," said Mr. Glover.

He has a unique perspective on the world picture because Wallace Barnes was acquired last year by Theis of West Germany.

There have been a number of ownership changes. Worthington Industries, Inc., now owns Newman Crosby of Pawtucket, R.I., and National Rolling Mills, Inc., of Malvern, Pa. The Cuyahoga wire and strip operation of USX Corp. was spun off to American Steel and Wire Co. Cold Metal Products was acquired by Jones & Laughlin Steel Corp. many years ago and then sold back to a private group in 1980.

Strip volume has held up fairly well. Shipments were up a little in 1986. The auto market is big for strip and there were signs of weakness there in early 1987.

Judging by past peaks, the industry is running at a little more than 50 pct of capacity and there is very tough pricing.

By George J. McManus

A true strip product is tailor-made to the customer's needs, says one industry executive.

High blood pressure. Treat it and live.

The only way to control high blood pressure is to treat it every day. Do whatever your doctor prescribes, but do it daily, no matter how you feel.

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If you haven't started, do something about it, today.

And if you've stopped, don't be discouraged. You can get back on treatment and bring that pressure down.

High blood pressure. Treat it every day and live.

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U.S. Department of Health and Human Services

4TH QUARTER EARNINGS
STEEL IN THE BLACK

Most of the large steel companies made money in the final three months of 1986, but the profits resulted from cost reductions rather than from any significant price relief.

In the fourth quarter of 1986, the costs of most large steel companies were lower than their prices.

This is another way of saying the companies made money. It is an appropriate way because the profits resulted from cost reduction rather than from any significant price relief. If steel prices stay put in 1987, the industry's continued cost cutting could finally bring a payoff.

That's a big if, but the potential for a payoff was illustrated by the fourth quarter report of Bethlehem Steel Corp. In its basic steel sector, Bethlehem went from an operating loss of $15 million in the third quarter of 1986 to an operating profit of $73 million in the fourth quarter.

The profit gain came despite a slight drop in prices. Steel prices did firm in the fourth quarter, but with a portion of its tonnage based on earlier quotations, Bethlehem's dollar sales and price collections were down a little in the last quarter.

That left only one main source of profit improvement. "The fourth quarter 1986 results reflect cost benefits from our two new continuous casters as well as productivity improvement at all steel plants except Steelton," said Bethleham Chairman Walter F. Williams.

Also reflected in the second half of 1986 were the sharp pay cuts negotiated by most large mills. Bethlehem reduced its employment costs $2.85 an hour as a result of the new contract with United Steelworkers of America.

For most steel companies, there was extra volume in the fourth quarter because of the strike at steel plants of USX Corp. Bethlehem's shipments rose 4 pct from the third quarter to the fourth.

The USX work stoppage also contributed to price firmness, although the full effect won't show up until the first quarter of 1987.

With USX now resuming production and with most forecasts calling for lower shipments in 1987, the recent steel profits could turn out to be a flash in the pan. In this setting, it comes as a surprise that a number of investment analysts are recommending the stock of Bethlehem.

This is particularly surprising because not too long ago Bethlehem's name often cropped up in speculation on endangered steel companies. The bankruptcy talk has now subsided.

"I think Bethlehem is in better financial shape than most people think," said Richard Henderson of the Pershing Div. of Donaldson, Lufkin, and Jenrette. Asset sales and other measures have relieved short term pressures, said Mr. Henderson.

His endorsement is still surprising because Bethlehem is a pure steel company; the whole industry must prosper if it is to do well.

Mr. Henderson does look for a general upturn. He sees the weakening of the dollar, inventory depletion, and lower interest rates boosting metalworking activity.

"I think consumption of steel has been understated," he said. "What's happening is the industrial sector of the country is being revived."

Mr. Henderson is predicting steel shipments of 76 million tons in 1987. "That may be pushing it," he said, but he feels forecasts as low as 64 million tons are far too pessimistic.

Finally, he believes there is a chance of steel price stability in 1987. He doesn't think USX will come charging into the market with price cuts.

For Bethlehem, Mr. Henderson sees further cost reduction from full use of the 2.9-million-ton caster at Sparrows Point and the 2.2 million-ton caster at Burns Harbor.

Cost Reductions

The whole industry is reducing costs, but the impact is being obscured in many cases by massive write-offs. USX took a $1.5 billion charge in the fourth quarter, partly in anticipation of a 7-million-ton reduction in active capacity.

In 1987, USX expects reduced costs to add $600 million to pretax income. The four-year labor agreement is seen reducing employment costs an average of $100 million annually.

A special charge of $600 million was responsible for the $453 mil-

STEEL EARNINGS

STEEL: A BETTER FOURTH QUARTER ENDS A LOUSY YEAR

FOURTH QUARTER PROFIT REPORT—1986 (In Millions of Dollars)

		EARNINGS			SALES		
	E/S	4th Q 1986	4th Q 1985	Pct Change	4th Q 1986	4th Q 1985	Pct Change
USX	–	($1,415.0)	$89.0	–	$2,770.0	$5,048.0	–45.0
LTV	–	(453.4)	(75.7)	–	1,103.6	1,221.4	–9.6
BETHLEHEM	3.3	34.2	(77.5)	–	1,022.4	1,285.9	–20.0
INLAND	3.7	30.2	(90.5)	–	817.6	716.4	+14.0
ARMCO	5.2	34.6	18.6	+86.0	668.2	663.5	+0.7
NATIONAL	0.5	2.8	(27.2)	–	593.0	508.3	+17.0
TOTAL	–	(1,766.6)	(163.3)	–	6,974.8	9,443.5	–26.0
CYCLOPS	1.9	8.2	8.0	+2.0	419.2	392.4	+6.8
WEIRTON	4.8	15.1	12.5	+21.0	313.8	266.6	+18.0
WHEEL–PGH	–	(213.8)	(94.1)	–	240.7	96.3	+150.0
INTERLAKE	5.7	10.4	7.9	+33.0	183.1	172.6	+6.1
CARPENTER	1.8	2.0	1.4	+46.0	110.5	129.1	-14.0
LUKENS	1.0	1.1	9.5	-89.0	104.6	100.7	+3.9
QUANEX*	–	(6.2)	1.3	–	79.4	74.1	+7.2
FLORIDA	4.3	3.2	2.5	+30.0	74.4	69.2	+7.5
LACLEDE	2.7	1.6	1.4	+15.0	58.1	57.3	+1.5
CF&I	–	(2.2)	(1.8)	–	49.6	60.5	-18.0
COPPERWELD	–	(3.4)	(8.0	–	47.5	47.7	–
BIRMINGHAM	6.2	2.6	2.0	+31.0	42.0	36.4	+15.0

* Results of First Quarter ending January 31, 1987

YEARLY PROFIT REPORT—1986 (In Millions of Dollars)

		EARNINGS			SALES		
	E/S	1986	1985	Pct Change	1986	1985	Pct Change
USX	–	($1,833.0)	$598.0	–	$14,938.0	$20,779.0	–28.0
LTV	–	(3,251.6)	(713.9)	–	4,469.0	5,375.4	–17.0
BETHLEHEM	–	(152.7)	(196.0)	–	4,332.9	5,117.7	–15.0
INLAND	0.6	19.3	(178.4)	–	3 178.2	2,999.4	+5.8
ARMCO	–	(472.0)	44.8	–	2,640.5	2,936.1	–10.0
NATIONAL	–	(59.8)	(88.4)	–	2,127.8	2,082.3	+2.2
TOTAL	–	(5,749.8)	(543.9)	–	31,681.4	39,289.9	–19.4

lion net loss of LTV Corp. in the fourth quarter. LTV Steel, which reduced its labor costs $3.60 an hour in 1986, had an operating profit of $130 million in the fourth quarter.

That compared with an operating loss of $50.7 million in the fourth quarter of 1985.

Causing unhappiness in the industry are the special savings that flow from the bankruptcies of LTV and Wheeling-Pittsburgh Steel Corp.

According to Oppenheimer & Co., Inc., LTV deferred $80 million in interest expense in the fourth quarter and eliminated another $50 million in pension and vendor expenses.

"The assumption of pension liabilities by the government and the potential of additional wage and benefit reduction for companies who enter bankruptcy can provide them unfair cost advantages over other steel companies," said Howard M. Love, chairman of National Steel Corp. "Right now, the system provides an incentive for declaring bankruptcy."

National Steel went from a loss in the fourth quarter of 1985 to a small profit in the last quarter of 1986.

"In the past six months, we have improved quality and productivity, and reduced costs and energy consumption," said Mr. Love. "We anticipate productivity gains and cost cutting efforts will continue throughout 1987."

Inland Steel Industries was the only big steel company to be profitable in the whole of 1986. Inland earned $19 million in the full year and $30 million in the fourth quarter. The year was the first profitable one for Inland since 1981.

It should be said bullishness about steel prospects isn't widespread. "Fundamentally, the industry continues to have problems," said Robert Hageman of Kidder Peabody & Co. "I'm looking for a flat shipment year."

Mr. Hageman did offer one encouraging view. "I'm not looking for any price deterioration this year."

John C. Tumazos of Oppenheimer advised the sale of steel stocks in February. He predicted steel shipments would fall to 64 million tons in 1987. He said, however, that a major steel bankruptcy was unlikely in 1987.

By George J. McManus